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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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William L. Miller

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MERCHANT & GOULD PC

P.O. BOX 2903

MINNEAPOLIS, MN 55402-0903

EXAMINER

RAMPURIA, SATISH

ART UNIT

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2191

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/696,426	<b>Applicant(s)</b> MILLER, WILLIAM L.	
	<b>Examiner</b> SATISH S. RAMPURIA	<b>Art Unit</b> 2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,8-15,18-21,23,25-29,31 and 33-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-15,18-21,23,25-29,31 and 33-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Response to Amendment***

1. This action is in response to RCE filed on 01/11/2008.
2. Claims 6, 7, 16, 17, 22, 24, 30, and 32 have been cancelled by the Applicants, however, the cancelled claims should not have the claim text. Claim 29 has been amended by the Applicants but the status of the claim is incorrect, it should have been as 'currently amended'. It is respectfully requested to correct these issues in the next response. To expedite the process Examiner is sending an appropriate action.
3. The objection to specification is withdrawn in view of Applicant's amendment.
4. The rejections under 35 U.S.C. §112 second paragraph to claim 9-10 and 18-19 is withdrawn in view of Applicant's amendment/comments.
5. Claims amended by the Applicants: 1, 12, 21, and 29.
6. Claims cancelled by the Applicants: 6, 7, 16, 17, 22, 24, 30, and 32.
7. Claims 1-5, 8-15, 18-21, 23, 25-29, 31 and 33-36 are pending.

***Continued Examination Under 37 CFR 1.114***

8. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/11/2008 has been entered.

***Claims objection***

9. Claims 23, 25-26, 31, 33-34 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

i.e.

Claim 23 is dependent on cancelled claim 22.

Claim 25 and 26 are dependent on cancelled claim 24.

Claim 31 is dependent on cancelled claim 30.

Claim 33-34 are dependent on cancelled claim 32.

***Response to Arguments***

10. Applicant's arguments filed 10/30/2007 have been fully considered but they are not persuasive. Arguments with respect to amended limitations are moot in view of new grounds of rejections.

In the remarks, the applicant has argued that:

Neither Breeden et al. nor Gove et al. discloses a system in which errors detected in a run time environment are traced back to an integrated development environment to determine model errors. As the Office Action recognizes, "Breeden does not explicitly disclose whereby the failures detected in the run-time environment are traced back to the integrated development environment to determine model errors." Office Action, p. 5. Gove et al. also fails to disclose or suggest that "the failures detected in the run-time environment are traced back to the integrated development environment to determine model errors." Rather, Gove et al. discloses that "using an IDE, a programmer develops, compiles, runs, debugs and profiles the code from within the IDE." (emphasis added) Gove et al. further discloses that "[b]ecause the IDE is integrated, if the compiler reports a problem, then the line which causes the problem is high-lighted." See, paragraph [0021]. In other words, Gore et al. discloses only one environment which is the integrated development environment. Therefore, Gove et al. fails to disclose or suggest that "the failures detected in the run-time environment are traced back to the integrated development

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environment to determine model errors", as recited in claims 1 and 12. Gove et al. thus also fails to disclose similar limitations recited in claims 21 and 29.

Examiner's response:

In response to applicant's argument, the environments integrated development environment and runtime environment are taught by Breeden (see Figure 1, elements 100 and 200). With respect to limitation "whereby the failures detected in the run-time environment are traced back to the integrated development environment to determine model errors" is disclosed by combining the reference Gove with Breeden (see the rejection below). The limitation is taught by the reference Gove, Gove discloses a method for developing a software program using an integrated development environment. Gove not only discloses human debugging of a program, as indicated by the Applicants, but also discloses a compiler reports a problem in IDE development process then the line which causes the problem is highlighted (paragraph [0021]). Applicant's only makes general allegations. Therefore, the rejection is proper and maintained herein.

### ***Claim Rejections - 35 USC § 101***

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. Claims 1-5, 8-15, 18-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1 and 12 are directed to system of functional descriptive material per se, and hence non-statutory. There are no indications or suggestions in the specification or claims that would associate the recited software components in the claims with hardware elements of the electronic device. The recited components of the claims can reasonably be interpreted as computer program modules / software per se. Therefore, the claims constitute computer programs representing computer listings per se. Such descriptions or expressions of the programs are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. Claims 8-15, 18-20 are directly or indirectly dependent on claims 1 and 12 respectively, thus suffering the same deficiency as claims 1 and 12.

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1-3, 5, 8-13, 15, 18-21, 23, 26-29, 31, and 34-36 rejected under 35 U.S.C. 103(a) as being unpatentable over US Publication No. 2006/0206856 to Breeden et al. (hereinafter, Breeden) in view of US Publication No. 2004/0006760 to Gove et al.

(hereinafter, Gove) and further in view of US Patent No. 6,950,782 to Qiao et al.

(hereinafter, Qiao).

**Per claim 1:**

Breeden disclose:

- A system for learning model-based lifecycle diagnostics, the system comprising:
- an integrated development environment having software tools linked within (FIG. 1 and paragraph [0020-0021] “...the design/compile time environment... the IDE includes design components...developers can easily move or switch (as indicated by the bidirectional arrow)...”);
- a run-time environment having agents that detect failures linked within (paragraph [0067] “Design time and Run time steps...perform a visual test or debug of the application ...”); and
- a bi-directional link between the integrated development environment and the run-time environment (paragraph [0021] “...developers can easily move or switch (as indicated by the bidirectional arrow)...from one environment to the next...”).

Breeden does not explicitly disclose whereby the failures detected in the run-time environment are traced back using to the integrated development environment to determine model errors.

However, Gove discloses in an analogous computer system whereby the failures detected in the run-time environment are traced back to the integrated development environment to determine model errors (Gove paragraph [0020] “After the performance data

is collected by the IDE, then the developer reviews the performance data and debugs the program (i.e., fixes execution problems of the program)...”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of whereby the failures detected in the run-time environment are traced back to the integrated development environment to determine model errors as taught by Gove into the method of developing software in an integrated development environment and in run time environment as taught by Breeden. The modification would be obvious because of one of ordinary skill in the art would be motivated to detect the failures in the run time environment and trace back to the development to fix them to optimize the end process performance as suggested by Gove (paragraph [0010]).

Neither Breeden nor Gov explicitly disclose the agents including model-based diagnostic agents and learning model-based diagnostic agents.

However, Qiao discloses in an analogous computer system the agents including model-based diagnostic agents (col. 1, lines 61-62 “plurality of diagnostic... agents”) and learning model-based diagnostic agents (col. 4, lines 34-35 “...reference models and/or learned information”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of having model-based diagnostic agents and learning model-based diagnostic agents as taught by Qiao into the method of developing software in an integrated development environment and in run time environment as taught by the combination system of Breeden and Gov. The modification would be obvious because



of one of ordinary skill in the art would be motivated to have model-based diagnostic agents and learning model-based diagnostic agents to provide a diagnostic system that can detect and describe the malfunction and also perform reliable job (col. 1, lines 40-52).

**Per claim 2:**

The rejection of claim 1 is incorporated and further, Breeden disclose:

- wherein the integrated development environment includes requirements management tools, design tools, and implementation tools linked together (paragraph [0013] “...application development system that assists in the developing, debugging, testing, deploying, and running of web applications”).

**Per claim 3:**

The rejection of claim 2 is incorporated and further, Breeden disclose:

- wherein the requirements management tools includes an object oriented requirements management tool and an issue-based information system requirements management tool (paragraph [0023] “design-time environment... allow... developer to develop JSP-based portal applications using a collection of... source editors”).

**Per claim 5:**

The rejection of claim 2 is incorporated and further, Breeden disclose:

- wherein the implementation tools include a software function code generation, management, and deployment tool, and a software diagnostic code generation,

management (paragraph [0013] "...application development system that assists in the developing, debugging, testing, deploying, and running of web applications").

**Per claim 8:**

The rejection of claim 1 is incorporated and further, Breeden disclose:

- wherein the run-time environment includes a database, a server software tool, a broker, and diagnostic agents (paragraph [0062] "run time environment includes a Control container and Lifecycle driver... with the control factory...servlet container").

**Per claim 9:**

The rejection of claim 1 is incorporated and further, Breeden disclose:

- wherein the bi-directional link is a DRD link (paragraph [0020-0021] "...the IDE includes design components...developers can easily move or switch (as indicated by the bidirectional arrow)...").

**Per claim 10:**

The rejection of claim 9 is incorporated and further, Breeden disclose:

- wherein the DRD link includes a database (paragraph [0020-0021] "...the IDE includes design components...developers can easily move or switch (as indicated by the bidirectional arrow)...").

**Per claim 11:**

The rejection of claim 10 is incorporated and further, Breeden disclose:

- wherein the database is a distributed database (paragraph [0020-0021] "...the IDE includes design components...developers can easily move or switch (as indicated by the bidirectional arrow)...").

*Claims 12, 13, 15, 18-20* are the system claim corresponding to system claims 1, 3, 5, and 9-11 respectively, and rejected under the same rationale set forth in connection with the rejection of claims 1, 3, 5, and 9-11 respectively, above.

**Per claims 21, 27 and 28:**

Breeden disclose:

- A method of diagnosing model errors in a software environment including an integrated development environment and a run-time environment bi-directionally linked by a link (paragraph [0020-0021] "...the design/compile time environment ...the IDE includes design components...developers can easily move or switch (as indicated by the bidirectional arrow)..."), the method comprising:
- detecting failures within the run-time environment (paragraph [0067] "Design time and Run time steps...perform a visual test or debug of the application...").

Breeden does not explicitly disclose tracing the failures back to the integrated development environment; and identifying the model errors in the integrated development environment based on the tracing of the failures.

However, Gove discloses in an analogous computer system tracing the failures back to the integrated development environment; and identifying the model errors in the integrated development environment based on the tracing of the failures (Gove paragraph [0020] “After the performance data is collected by the IDE, then the developer reviews the performance data and debugs the program (i.e., fixes execution problems of the program)...”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of tracing the failures back to the integrated development environment; and identifying the model errors in the integrated development environment based on the tracing of the failures as taught by Gove into the method of developing software in an integrated development environment and in run time environment as taught by Breeden. The modification would be obvious because of one of ordinary skill in the art would be motivated to detect the failures in the run time environment and trace back to the development to fix them to optimize the end process performance as suggested by Gove (paragraph [0010]).

Neither Breeden nor Gov explicitly disclose the agents including model-based diagnostic agents and learning model-based diagnostic agents.

However, Qiao discloses in an analogous computer system the agents including model-based diagnostic agents (col. 1, lines 61-62 “plurality of diagnostic... agents”) and learning model-based diagnostic agents (col. 4, lines 34-35 “...reference models and/or learned information”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of having model-based diagnostic agents and

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learning model-based diagnostic agents as taught by Qiao into the method of developing software in an integrated development environment and in run time environment as taught by the combination system of Breeden and Gov. The modification would be obvious because of one of ordinary skill in the art would be motivated to have model-based diagnostic agents and learning model-based diagnostic agents to provide a diagnostic system that can detect and describe the malfunction and also perform reliable job (col. 1, lines 40-52).

**Per claim 23:**

The rejection of claim 22 is incorporated and further, Breeden disclose:

- further comprising determining root causes for known failure modes based on the failures detected by the model-based diagnostic agents (paragraph [0067] “Design time and Run time steps...perform a visual test or debug of the application. If everything is satisfactory the application is deployed...”).

**Per claim 26:**

The rejection of claim 24 is incorporated and further, Breeden disclose:

- wherein tracing failures includes the diagnostic agents writing information into the link (paragraph [0020-0021] “...the IDE includes design components...developers can easily move or switch (as indicated by the bidirectional arrow)...”).

*Claims 29, 31, and 34-36* are the system claim corresponding to method claims 21, 23, and 26-27 respectively, and rejected under the same rational set forth in connection with the rejection of claims 21, 23 and 26-27 respectively, above.

15. Claims 4, 14, 25, and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Breeden, Gove, Qiao in view of and further in view of US Patent No. 6,167,353 to Kanesvsky et al. (hereinafter, Kanesvsky).

**Per claim 4:**

The rejection of claim 2 is incorporated and further, neither Breeden, Gove nor Qiao explicitly disclose wherein the design tools include an object oriented model driven function design tool, a knowledge-based diagnostics design tool, and a model-based diagnostic design tool.

However, Kanesvsky discloses in an analogous computer system wherein the design tools include an object oriented model driven function design tool, a knowledge-based diagnostics design tool, and a model-based diagnostic design tool (col. 2, lines 29-40 "...model based diagnostic system...enables selection of components... response to indications").

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of wherein the design tools include an object oriented model driven function design tool, a knowledge-based diagnostics design tool, and a model-based diagnostic design tool as taught by Kanesvsky into the combination system the method of developing software in an integrated development environment and in run time environment as taught by Breeden, Gove and Qiao. The modification would be obvious because of one of ordinary skill in the art would be motivated to have a model-

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based diagnostic design tool to provide an automated test tool as suggested by Kanesvsky (col. 2, lines 16-26).

*Claims 14* are the system claim corresponding to system claim 4, and rejected under the same rational set forth in connection with the rejection of claim 4, above.

*Claim 25* are the method claim corresponding to system claim 4, and rejected under the same rational set forth in connection with the rejection of claim 4, above.

*Claim 33* are the computer program product claim corresponding to system claim 4, and rejected under the same rational set forth in connection with the rejection of claim 4, above.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Satish S. Rampuria** whose telephone number is **(571) 272-3732**. The examiner can normally be reached on **8:30 am to 5:00 pm** Monday to Friday except every other Friday and federal holidays. Any inquiry of a general nature or relating to the status of this application should be directed to the **TC 2100 Group receptionist: 571-272-2100**.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Wei Y. Zhen** can be reached on **(571) 272-3708**. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Satish S. Rampuria  
Patent Examiner/Software Engineer  
Art Unit 2191

/Ted T. Vo/

Primary Examiner, Art Unit 2191